AMENDMENTS TO THE CLAIMS:

Please cancel without prejudice claims 4, 13 and 14 and amend claims 1-3, 5-12 and 15-17 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) An optical assembly ~~adapted to observe~~for observing a scene ~~which provides~~comprising an optical input to the assembly, said assembly comprising:

a spatial light modulator (SLM),

a controller controlling the display of the SLM, and

a detector; wherein the controller ~~being adapted to modify~~modifies a pattern displayed on the SLM ~~so as to cause the SLM, in use, to control the radiation incident upon the SLM from the optical input so as~~ to sequentially scan radiation from said observed scene across the detector, said radiation scanned from a plurality of different angular regions or depth regions in 3-D space of the scene or a surface region through the 3-D space that the optical assembly is observing, wherein the pattern displayed on the SLM has a component comprised of a substantially linear diffraction grating pattern and a component comprised of a substantially chirp function.

2. (currently amended) An assembly according to claim 1 in which the controller ~~is adapted~~controls the SLM so as to scan different angular portions of the scene (angularly disposed in azimuth and/or ascension relative to the optical axis of the assembly).

3. (currently amended) An assembly according to claim 1 or claim 2 in which the controller controls the SLM so as~~is adapted~~ to focus different depth regions of 3-D scene space over the detector.

4. (cancelled).

5. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which angular portions are scanned by modifying the linear component of a combined linear function and chirp function.

6. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which different depth regions are focused by displaying patterns with different combined chirp functions.

7. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which the controller has a library of possible linear and/or quadratic or higher order functions and a selected combination of linear and quadratic or higher order functions from the library are, in use, applied to the SLM.

8. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which the detector comprises a line array of detector elements or a simple array of detector elements and the controller is adapted to control the display on the SLM to scan the scene image over the

detector array in a direction generally transverse to the direction of the line array, or transverse to the elongate direction.

9. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which the radiation from the selected surface or region in 3-D space in the scene is focused onto the detector.

10. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which the pattern on the SLM is capable of being changed at least a thousand times a second.

11. (currently amended) An assembly according to ~~any preceding~~ claim 1 in which points in 3-D space are sequentially in time directed, or focused, onto a detector, the SLM being programmed by the controller to direct, or focus, different points in space onto the detector at different times.

12. (currently amended) A method of directing a scene image onto a detector comprising using a programmed SLM controlled by a controller to control the x-y part of the scene image that is directed onto the detector and/or the imaged plane of the scene in the z direction that is in focus, the ~~scene-detector~~ direction between the scene and the detector being in the z direction, in which the display on the SLM is programmably controlled by a controller by application of a chirp and/or a linear grating to the SLM so as to scan the scene image over the detector over time, with the controller taking time-spaced records of what the detector detects.

13. (cancelled).

14. (cancelled)

15. (currently amended) A method according to ~~anyone of~~ claims ~~11 to 14~~12 in which the orientation of a linear grating and/or the spacing of the lines of the grating are controlled so as to control the location of the region of the scene that is directed onto the detector.

16. (currently amended) A method according to claim ~~13~~ 12 ~~or any claim dependent directly or indirectly on claim 16~~ in which the chirp is used to determine the distance from the detector of the plane in 3-D space in the scene that is focused to the detector.

17. (currently amended) A method according to ~~any one of~~ claims 12 ~~to 16~~ in which the programmed SLM compensates for aberration in an optical system.